

# 200W Solar Charger Maximum Power Point Tracker

Operating Instructions  
Please read these instructions before use



This revolutionary maximum power point tracker solar charger was designed using the technology that won GSL Electronics the prestigious "2008 EDN Innovation award". A simple, compact and low cost alternative. Ideal for charging batteries with the new low cost high efficiency grid type panels.



**MPPT200B Unit**

PATENT APPLIED FOR - 2010901565

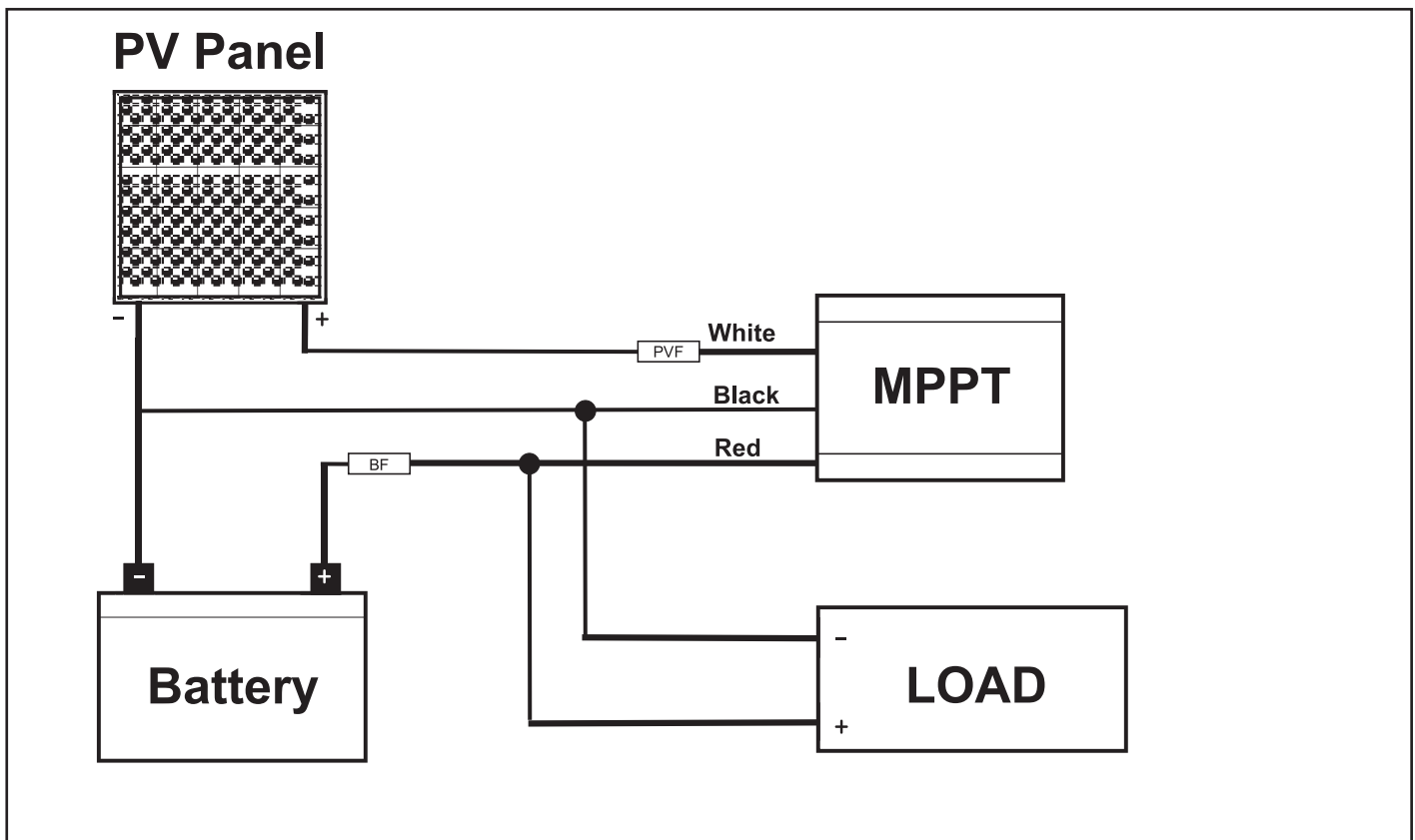
<b>MPPT200B Specifications</b>	
Efficiency Typical	96%
Input Voltage	15V to 55V
Charge Voltage	14.6V
Max Panel Power	250W
Quiescent Current	0.04A
Thermal Protection	Multilevel type
Dimensions (mm)	35 X 75 X 143mm
Indications	LED display – battery OK / LOW
Continuous Operation	Typical: 190W Input @ 0°C to 40°C Ambient

**MPPT200B General Information:**

- Green LED: ON - Battery above 12.8V, FLASHING - Battery below 12.8V, OFF - No Input
- This MPPT is designed for cyclic charging of 12V Batteries at 14.6V.
- Custom voltages are possible but minimum orders apply.
- This MPPT has a built in multilevel over temperature protection to improve product reliability while maximising output power availability.
- The MPPT will efficiently charge 12V batteries from 12V/24V panels.
- The panel voltage limit for the MPPT200B is a maximum open circuit voltage below 55V.

**Important:**

- Use wires suitable for at least 20A, but if wire runs are over 3m then larger wires are recommended to limit voltage drop and losses.
- Install the unit in a dry place out of direct sunlight and away from flammable liquids or gases.
- Battery fuse ( BF ) is always required and must be located as close to the battery as possible, its sizing depends on the wire size and load ratings. Typically a 15A fuse would do.
- Before connecting battery always check battery and PV panel polarity.
- For Panel Fuse (PVF) follow your panel manufactures recommendations.





#### **MPPT FAQs**

##### **Q: What is an MPPT?**

MPPT stands for Maximum Power Point Tracker and is a specialised converter designed to maintain the PV voltage at the level in which it delivers maximum power to the load or battery. The nominal panel output power can only be ensured with the use of an MPPT.

##### **Q: What are the GSL MPPTs advantages compared to standard solar regulators?**

1. Suitable for new lower cost high efficiency grid type panels since the GSL MPPT can efficiently charge the batteries from relatively high voltage, say 12V batteries from 36V MPP panels.
2. Less interference and more accurate voltages during absorption and float.

##### **Q: What output can I expect from a 150W or 200W MPPT?**

1. The maximum bulk charge current with a 12V battery and 150W panel is approximately 12A, so you can expect about 40AH per day which is a 40W load for about 10 hours.

##### **Q: Why are MPPT used mainly in high power systems?**

Until now and despite their overwhelming advantages MPPTs have been excluded from low power systems because of cost. The new GSL MPPT specifically designed for low power makes economic sense even in small systems.

##### **Q: What sort of batteries should I use?**

1. A deep cycle battery is a must due to the cyclical nature of solar systems with a recommended battery capacity of at least 60AH.
2. A larger battery will not only give longer run time during low light but also will be able to avoid available PV power being unstored such as when the battery reaches the float stage.

##### **Q: How does PV temperatures affects charge current?**

Temperature increase brings down the PVs maximum power point voltage reducing the MPPTs current gain available. In principle at 25C it is possible to achieve 30% gain but at 40C (A more realistic average temperature) about 20% is still available.

##### **Q: What happens at low PV currents?**

The MPPT will outperform the conventional regulator above 4% of nominal panel power. Below 4%, 6W in a 150W panel, the MPPT will have a slightly lower output current than a non MPPT.



**Q: Is interference possible? and if so what do I do?**

GSL's MPPTs produce far less interference than conventional solar regulator during the absorption and float stages, that is during most of its operating time, and its designed to comply with local and international EMI standards however some interference is still possible. If interference occurs first try and reorient the aerial or move the sensitive equipment away from the MPPT wires. Ensure the MPPT chassis is grounded. Grounding a battery terminal may also help and finally you can try adding ferrite clamps.

*Warranty Conditions:* Our products come with guarantees that cannot be excluded under the Australian Consumer Law.

The customer is entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. The customer is also entitled to have the products repaired or replaced if the products fail to be of acceptable quality and the failure does not amount to a major failure.

GSL Electronics (GSL) warrants that its products will, under normal use and service, be free of defects in material and workmanship for a period of two (2) years from the date of the original purchase by the customer as marked on the customer's original invoice. Please refer to our website for full warranty and return information which can be found at <http://www.gsl.com.au/faq.html>

